scribed, such as the flint flakes, were naturally produced. M. Chabas also took the same view as Dr. Lepsius, and denied the existence of any evidence of a stone age in Egypt or elsewhere. On the occasion of a late visit to Egypt with the object of getting conclusive personal evidence on the question, the author found worked flints at various spots along the Nile Valley, especially in the valley of the tombs of the kings of Thebes, and at Abydos, and after carefully weighing the facts and arguments brought forward by MM. Lepsius and Chabas, he was disposed to agree with MM. Arcelin and Hamy in considering that these flint implements really belonged to the stone age, and were ante-Pharaonic. Sir John exhibited a full series of the Egyptian flint implements found by himself during his visit, and the paper concluded with a minute description of each specimen. Prof. Owen, F. R. S., then read a paper on the ethnology of Egypt. Since the observations recorded in 1861, by Dr. Pruner-Bey, on the race-characters of the ancient Egyptians, mainly based on the characters of skulls, evidences, in the author's opinion, of a more instructive kind have been discovered, chiefly by M. Mariette-Bey. They consist of portrait-sculptures, chiefly statues, found in tombs accompanied by hieroglyphic inscriptions revealing the name, condition, and date of decease. A study of those works led to the conclusion that three distinct types were indicated. (1) The primal Egyptian, bearing no trace of negro or Arab, but more nearly matched by a high European facies of the present day. (2) The type of the conquering race of Shepherd Kings, or Syro-Arabian, exemplified in the Assyrian sculptures. (3) The Nubian Egyptian, typified in the bas-relief figure of Cleopatra in the Temple of Denderah. In conclusion, the professor drew a graphic picture of the high state of civilization attained by the Primal Egyptian race, whose exquisite works, done six thousand years ago, are now rendered accessible to man. The paper was amply illustrated by a series of photographs, maps and diagrams. — *Nature.*

MICROSCOPY.

Improvements in Insect Mounting. — The lesson of the fly in amber was one which took us a long time to learn, or rather which we never learned well until, now, its whole secret comes to us from India. Mr. Staniforth Green, of Ceylon, has sent a collec-

tion of mounted insects to London, which have been presented to the Queckett club by Mr. Curties. They are represented by Messrs. Curties, Ingpen, Loy, McIntire and others as well preserved and satisfactory objects, free from cloudiness, air bubbles, or deterioration of tissue as well as from distortion of form. Not being flattened or eviscerated, they show to great advantage in the binocular microscope. A few had been soaked in potash solution, but these were the least satisfactory members of the collection. The largest and best part of the objects had been immersed in the medium without maceration or other preparation. The smaller insects were simply killed by immersion in ether and immediately transferred to the soft balsam; the larger insects were similarly killed in ether, then dried a few days under slight pressure between the leaves of a book, and afterward soaked in turpentine and transferred from that to balsam. The balsam containing the insects was kept in the tropical sun for some time, until all moisture was dissipated and the balsam had pervaded the whole of the tissues. The muscles and other internal and external organs, not having been disorganized by potash or in any other way, were well preserved and capable of inspection; and in many cases polarized well. Small delicate insects which are difficult of preservation or even of study in any other way, are most successful in this; as, for instance, aphides, small and frail diptera, hymenoptera, minute spiders, eggs, larva, pupa, etc. This method is of value not only to the microscopist, but also to the entomologist, placing rare or frail specimens out of reach of dust, mould, ants, and other dangers which threaten dried specimens.

We have tried this method largely, both with thin balsam, and with hard balsam dissolved in chloroform and in benzol, and have succeeded with all. Probably experience will show that each is best adapted to certain objects. A water-bath is a good substitute for the tropical sun. When the balsam is sufficiently hard the objects should be mounted in it in glass cells. Doubtless the sand-blast cells will prove to be adapted to this purpose.

Measuring Angular Aperture. — Mr. Wenham, in order to gain accuracy in measuring the angular aperture of dry objectives, would like to cut off all stray light that might enter the lens without being capable of forming an image, by placing over the objective a conical nozzle having a small aperture in its apex. This

aperture would correspond to the focus of the lens, and the nozzle would just include the cone of rays capable of forming an image and would exclude all false rays of any considerable angle. This method would be inconvenient, however, and as the angle is measured by a horizontal movement a vertical slit will be a satisfactory substitute. For high powers the slit must have thin edges; and it must be capable of adjustment to the width of focus of the lens. His arrangement is easily made and used. A plate three inches long and one inch wide has a central aperture nearly one-half inch wide, the edges of this opening being bevelled away below so as to admit a large angle of light. Upon this plate lies a glass slip about 2 in. $\times \frac{1}{2}$ in., pressed against at one end by a spring, and at the other end by a screw, so that it can be easily slid backwards and forwards under the two staples (one inch apart) which hold it upon the surface of the plate. The slip is formed by the edges of two slips of platinum foil (·001 thick) one of which is cemented with Canada balsam upon the glass slip, while the other is fastened under one of the staples so as to lie on the glass slip but not move with it. These platinum slips never overlap; but their edges may be brought in contact, or may be separated as widely as desired by means of the set-screw pressing against one end of the glass slip which carries one of them. In measuring angles the usual method of rotating the instrument horizontally is employed; only this apparatus lies upon the stage with its slit in focus of the objective and adjusted in width so as barely to include the whole breadth of the focus. If the stage of the microscope is too thick to admit full angle of light, the apparatus may be arranged below the stage and the objective focussed down to it.

Cataloguing Microscopic Specimens. — At the Medical Microscopical Society, a paper by Mr. Groves was read on the subject of cataloguing and arranging microscopic specimens. Though classification was deemed necessary in large cabinets, yet it was considered entirely undesirable in small ones, and in both cases the catalogue and not the arrangement was relied upon for finding objects. The method of cataloguing recommended consists of an ordinary alphabeted note book in which, under the proper alphabetical heading, every portion of each specimen is independently entered and the slide referred to by numbers or otherwise. Thus one excellent slide which shows well a number of points of struct-

ure will be entered under several headings and be used to illustrate all these points, while under the usual methods of classifying slides in series, a number of duplicate slides would be required to fill up the different series. All difficulty in finding specimens is also positively obviated.

The president, Mr. Jabez Hogg, expressed the belief that the proposed plan would supersede all others now in use.

SAND-BLAST CELLS. — Mr. Henry F. Hailes contributed to the Queckett Club an account of a new and probably valuable application of the sand-blast process. It had occurred to him that this process might be employed to sink cells in glass slips for microscopical mounting; and he applied to the inventor, Gen. Tilghman, who had a supply sunk in an apparently satisfactory manner. Mr. C. Baker, the optician of High Holborn, has undertaken to supply these new cells to the trade. They can be sunk of any desired size and shape, and possess the positive advantage of having no joint at the bottom of the cell. Of course the floor and sides of the cell are rough or "ground" surfaces, but this is not a serious disadvantage. For opaque objects the ground surface forms an agreeable background; for objects in balsam, the refractive index of the medium corresponds so nearly with that of glass that the granulations of the glass surface are optically obliterated and disappear entirely; for media of less refractive power than balsam, it is necessary to varnish first the ground surface with balsam and allow it to dry before introducing the fluid. The new cells seem particularly available for foraminifera, insects mounted without flattening, and other clumsy specimens, whether in air or balsam or glycerine.

ANOTHER MICROSCOPICAL CEMENT. — Mr. T. Charters White recommended to the Queckett Club four or five parts of common yellow beeswax melted with one part of Canada balsam for this purpose. Like the electrical cement, and the paraffine, which have already come into general use for the same purpose, it is applied melted, on a hot wire, after the manner of soldering; sets as soon as cool, and hence cannot run in under the cover however thin the cell may be, and can be instantly loosened by warming if the cell is to be repaired or the object dismounted for any purpose. It is especially applicable to dry mounting, to temporarily fixing objects for early use, and to fasten apparatus where contrivances, as

growing cells, etc., are extemporized for immediate use and without care as to their durability.

NEW APPLICATION OF STAINING TO PATHOLOGY.—Dr. H. C. Major claims that healthy and morbid tissues are affected by logwood staining-fluid—with such different degrees of facility as to afford a really valuable means of discrimination. Thus staining becomes a means of diagnosis as well as of defining the structure of cells, etc. He instances sections of brain in cases of acute mania and of senile atrophy, in the former the gray cortical layer and in the latter the internal white substance being most deeply stained and best defined.

NOTES.

THE governor of Minnesota calls on the general government for aid, as owing to the ravages of the grasshoppers for two years past "many thousands are now (July 8) suffering for food." An "utter and wide-spread destitution exists in the southwestern counties of this state among the new settlers, whose crops have been destroyed for two years." He asks for contributions of money and provisions to relieve the immediate necessities of the sufferers. Why should not the grasshopper be eaten in turn? The grasshopper or locust of the east is universally eaten in portions of Africa and western Asia, and pronounced a nutritious and palatable article of diet by Arab chiefs as well as Hottentot savages. They are eaten roasted whole, minus the legs, or roasted and powdered. We would recommend that experiments be made as to the best mode of preparing the locust for food. They should be thoroughly cooked to guard against parasitic worms. Not willing to urge the use of grasshoppers as food for others without first eating them ourselves, we may say that we have found the grasshopper, first killed by boiling water, and then fried in butter, at least as palatable as many articles of food eaten by civilized people; and to people actually famishing, as is said to be the case in Minnesota, it will be worth their while to avail themselves of a food stuff which millions perhaps of people of other lands regard as wholesome.

THE Proceedings of the 22d, or Portland meeting of the American Association make a much more bulky volume than any of its predecessors. It is noticeable that while the papers in the section